TO: Sen. Bob Duff and Rep. Lonnie Reed, Chairmen,
and Members of the Committee on Energy and Technology

RE: Public Hearing March 4, 2014

Rivers Alliance of Connecticut is the statewide, non-profit coalition of river organizations, individuals, and businesses formed to protect and enhance Connecticut's waters by promoting sound water policies, uniting and strengthening the state's many river groups, and educating the public about the importance of water stewardship.

Rivers Alliance writes <u>in (qualified) support of RB 5409</u>, AAC Concerning Hydraulic Fracturing Waste. We believe it is important to affirm in statute, as you do here, that the state has the authority to regulate the transport and handling of fracking waste as hazardous waste. We expect the definitions in the bill to be very helpful going forward. <u>But we urge the committee to impose in addition a ban or moratorium on the importation of fracking waste until the public can be truly assured that there are no risks to health, safety, or water resources associated with accepting, storing, or disposing of the waste.</u>

As I understand it, this bill identifies all fracking waste as hazardous, although that point might be stated more clearly. This is different from the position of DEEP in oral testimony on RB 5308, AAC The Regulation of Fracking Waste. DEEP's interpretation of appropriate regulation was that a person importing or receiving this waste in Connecticut would have to report what is in the waste, and DEEP would then determine if the substance is hazardous and should be regulated as such. This interpretation is consistent with the summary of the intention of 5308: "To authorize the Commissioner of Energy and Environmental Protection to regulate, as hazardous waste, *certain materials* that are produced as a result of fracking activities." [emphasis added]

But in the foreseeable future, there appears no chance that fracking waste can be effectively decomposed into benign constituent substances for safe handling. In the laboratory, this may be possible with certain samples, but, in the field, the waste can vary from place to place, well to well, day to day. No one, evidently, has deployed the sophisticated and expensive equipment that would

be needed to render this toxic often radioactive material safe for discharge or storage. In fact, it is not clear that this transformation is even feasible much less affordable in volumes that are being produced.

One of the primary obstacles to safe handling of fracking waste is the secrecy surrounding the materials. The industry's website, FracFocus, promoted as a transparency tool, gives some information on some of the many dozens of chemicals used (http://fracfocus.org/chemical-use/what-chemicals-are-used), but the amounts and proportions are not specified, the waste constituents are not identified, and reporting on the website is voluntary. A prominent critique of the utility of the site was issued by Harvard Law School. The URL is http://blogs.law.harvard.edu/environmentallawprogram/files/2013/04/4-23-2013-LEGAL-FRACTURES.pdf There are also dozens of industry responses, if you are short of reading material.

The industry maintains that its technology is improving. For example, wastewater can be diluted with freshwater, and recycled for mining. This is helpful perhaps in delaying the exhaustion of aquifers and surface sources, but evidently produces a more concentrated and dangerous waste. On this point, I have attached documents on two recent articles from the distinguished journal *Environmental Science and Technology.*

The Oct. 2, 2013, issue includes an article by Nathaniel Warner (Duke University), Avner Vengosh, et al, Impacts of Shale Gas Wastewater Disposal on Water Quality in Western Pennsylvania*."* It finds current treatment of wastewater in western Pennsylvania inadequate. I am still working on downloading the original article (it can be read but not copied); however, here is the headline and synopsis from Science Daily.

Streams below fracking wastewater treatment show elevated salts, metals, radioactivity. ***Date:*** October 2, 2013 ***Source:*** Duke University***. Summary:*** *Elevated levels of radioactivity, salts and metals have been found in river water and sediments at a site where treated water from oil and gas operations is discharged into a western Pennsylvania creek.*

Another article of interest from this periodical, Dec. 3, 2013 is: *Suggested Reporting Parameters for Wastewater from Unconventional Fracking Extraction* by Kyle Bibby (University of Pittsburgh) et al. This highlights the difficulty of knowing the constituents of the wastewater and what to require in reporting. In particular, much information specific to the particular well is needed.

In conclusion, we support at this time a ban on import or transport of fracking waste because as yet the components and toxic potential of the return water and process water in fracking for natural gas are not fully identified or understood. Existing treatments are limited and disposal methods raise numerous concerns for health and the environment. Moreover, and especially important, Connecticut's regulatory resources are already overwhelmed by contamination of water and soil. Even if there were a safe way to manage fracking waste, we do not have the enforcement capability to ensure safe management. Before we consider any waste import, we need to make more progress on cleaning up brownfields, superfund sites, contaminated aquifers, and so forth.

There are a number of other bills on the agenda that I believe are beneficial. There are two for which we have sufficient information to express support. **RB 5410, AAC … Lost and Unaccounted for Gas** addresses a problem familiar from the water-supply business. Leaky infrastructure and unaccounted discharges are wasteful and dangerous. **Another positive bill is RB 5412, Shared Clean Energy Facilities.**

THANK YOU.

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